REMARKS/ARGUMENTS

In the previous Office action dated October 30, 2003, the Examiner takes the position that the claimed subject-matter of the independent claims is anticipated and/or obvious with respect to the cited reference US 5,620,75 (LaPerre). More specifically, the Examiner refers to reference numbers 34 and 35 in the disclosure of LaPerre, *i.e.* to the embodiment illustrated in Fig. 2 of LaPerre.

The applicant regards the claimed subject-matter of new independent claims 1 and 4 as novel and non-obvious with respect to the disclosure of LaPerre considering the following aspects:

1. At the outset, the applicant believes that the ***structures illustrated in Fig. 1 and 2 of LaPerre are not compatible or linked in any way with LaPerre's remaining disclosure and the inventive subject-matter of LaPerre.*** Among other things, the embodiment shown in Fig. 2 of LaPerre discloses a structure being deviated from the structure shown in Fig. 1 of LaPerre (*i.e.*, similar to the structure obtained by the process disclosed in US 4,849,265 to Ueda), which is disadvantageous from LaPerre's point of view since it has "an abrasive surface due to the uneven surface provided by the broad distribution of glass beads" (see col. 16, lines 38-42 of LaPerre).

In contrast, the remaining disclosure of LaPerre refers to the inventive embodiments of bead coated articles (see e.g. Figs. 3 and 3a of LaPerre) which have "an extremely smooth tactile feel and a low friction surface even though they can be prepared from glass microspheres intermixed with abrasive irregularly shaped glass particles" (see abstract of LaPerre), and which are manufactured by means of a transfer article (as *e.g.*, shown in Fig. 6 of LaPerre) by means of an entirely different process (see corresponding discussion in the reply to the first office action filed on August 07, 2003). In particular, ***LaPerre's method commences with providing a transfer carrier comprising a glass bead release layer 56 bonded to a support layer 55, followed by embedding a layer of transparent glass beads, which has to be performed in a mirror-reversed fashion.***

2. Concerning the disclosure of the manufacturing process to obtain the structure shown in Fig. 1 and 2 of LaPerre (which is referenced by the Examiner), LaPerre refers (see col. 16, lines 13-14 and lines 25-27 of LaPerre) to the manufacturing process described in US 4,849,265 to Ueda. ***It is explicitly specified in LaPerre, that the structure as illustrated in Fig. 2 of LaPerre is obtained "by a process similar to that disclosed in Ueda et al. [...] except that low refractive index glass beads intermixed with irregularly shaped particles are substituted for the beads of Ueda et al."***

As can be gathered in this context from Ueda, "a transparent bead material contained in a hopper 30 is sprinkled over the surface and firmly bonded to the adhesive layer 29 with the beads partly sunken in the layer 29" (see col. 6, lines 6-13 of Ueda). This means, however, that ***Ueda (and*** thus also the disclosure of ***LaPerre*** with respect to the embodiments shown in Fig. 1 and 2 of LaPerre) ***does in no way disclose to "apply a reflection ink comprising a plurality of reflection particles either directly on a transfer adhesive (2) or directly on an optional intermediate ink layer (8)".***

It is important to note that Ueda's process of sprinkling (solid) beads onto an adhesive layer, accompanied by a step of pressing said beads into the adhesive by means of a heat roll 32 and a pressure roll 33, is in no way comparable to the inventive teaching of applying, in two separate steps, (1) a transfer adhesive and (2) a reflection ink comprising a plurality of reflection particles either directly on the transfer adhesive or directly on an optional intermediate ink layer.

Among other things, a significant advantageous effect of the present invention is that - while the transfer adhesive is only needed and used for the later application of the transfer to a substrate- ***the reflection ink provides both for (a) an adhesion to the underlying layer (either transfer adhesive*** -which may dried and therefore not tacky anymore- or an optional intermediate ink layer), as well as for -by means of a sagging or sinking of the liquid ink with respect to the reflective particles- (b) achieving ***a structure wherein the reflective particles are raised above the remaining ink***. Neither LaPerre nor Ueda give a hint to such a teaching.

Viewed from another perspective, the process according to the present invention differs from the cited prior art by using a ***reflection ink (which comprises, in particular, pigments,***

binder etc.) which itself comprises the reflective particles. Said reflection ink adheres to the underlying layer due to the cross-linkage of the ink, i.e. not due to the underlying layer (which may be or may not be in a tacky state). In contrast, the underlying adhesive layer according to the present invention is not needed to actively bond the reflective particles by being in a tacky state.

The disclosure cited by the Examiner (i.e. Fig. 2 of LaPerre, corresponding to Ueda) ***does not teach to apply a reflection ink comprising a plurality of reflection particles on the underlying structure (either transfer adhesive or optional intermediate ink layer)***.

As a consequence, the glass particles which are applied according to LaPerre or Ueda do not exhibit any flowing properties which could enable a free arrangement or a free distribution in a liquid (ink), as it exists in the present invention. Instead, the glass particles according to LaPerre or Ueda remain in their initial position which they took after sticking on the tacky adhesive layer, after which a rolling process is performed. Therefore, the abrasive surface according to Ueda or LaPerre (Fig. 2) also implies the risk of injuries. In contrast to this, the structure obtained according to the present invention essentially avoids, although the reflection particles are raised above the surface, the existence protruding peaks. Even if chips or needles are used as reflective particles (see e.g. new claim 7), the mobility of these needles results in a final flat alignment of this needles to avoid abrasive surface structures with peaks or the like and an accompanying risk of injury.

It is important to note that the rolling process being performed according to the embodiment of Fig. 2 of LaPerre (or Ueda) substantially differs from the inventive method to apply a liquid (ink) including reflective particles. A further particular advantage of the inventive method is that it makes it possible to control the desired colour values as well as the reflection properties by means of controlling the inventive way of applying the reflection ink as well as controlling the respective mixing ratios.

3. As already explained, the inventive method of manufacturing a reflection transfer results (after the final step of drying the transfer) in a structure wherein ***the reflective particles are raised about the remaining ink***. In contrast to this, the structures obtained by Ueda or LaPerre are characterized by an upper transparent glass layer (see col. 1, line 42 of Ueda), which

itself is not at all able to colourfully reproduce any motif. As a consequence, the depiction of any coloured motif can only take place in underlying layers, which again results in an "artificial" or "glass-like" surface without a colourful character as in usual textiles.

In contrast to this, the achieved structure according to the present invention provides a reflection transfer giving – at daylight – a normal colour impression or effect, while additionally providing a reflection effect, if the structure is (e.g. at night) irradiated with light. This effect is neither achieved by LaPerre nor by Ueda. While the mayor disclosure of LaPerre (excepting Fig. 1 and Fig. 2 of LaPerre) tries to achieve a perfect smooth and regular surface (without any reflecting particles raising therefrom), the embodiments cited by the Examiner (Fig. 1 and 2 of LaPerre or Ueda) just teach to provide a transparent layer of glass beads at the top surface without any colour (or any bonding agent which could be coloured by means of colour pigments). Therefore, ***the cited references do not enable an illustration of coloured motifs (an additional application of a coloured layer in the method of Ueda would result in a loss of the reflection effect).*** Consequently neither LaPerre nor Ueda can give any hint to the inventive method of applying a mixture of (liquid) ink with reflection particles in order to make use of the cross linkage of the ink to the underlying adhesive layer.

4. Furthermore, and while focusing to the structure shown in Fig. 2 of LaPerre, it is important to note that the adhesive layer 32, on which the glass beads 31 (as reflective particles) are applied, is different from the adhesive layer 34 being applied on the release layer 35. In particular, the applicant points out that the structure as disclosed in Fig. 2 of LaPerre comprises two adhesive layers 32 and 34 (being separated by a flexible substrate), wherein the adhesive layer 32 is provided for supporting the glass beads 31, and wherein the adhesive layer 34 is provided for being exposed by removing the release layer 35 and for fixing the article i.e. on a substrate to achieve at a structure as e.g. illustrated in Fig. 3a of LaPerre (with substrate 4). Consequently, said embodiment of ***LaPerre does not teach to imprint, after applying on a base medium an adhesive layer, the same adhesive layer with either reflection ink or an intermediate ink layer, according to the claimed subject-matter of new claim 1.***

5. Also because of the presence of two adhesive layers in LaPerre, the embodiment of Fig. 2 of LaPerre requires additional process steps if compared to the present invention. In contrast to this, the present invention provides a simple and very effective method for the manufacture of a screen print reflection transfer, which exhibits very good reflection properties after transferring onto a substrate.

6. As follows from the above, the teaching of the above embodiments of LaPerre does also not anticipate the claimed subject-matter of new independent claim 4. In particular, the disclosure of LaPerre (or Ueda) gives no hint to apply on the base medium a transfer adhesive/reflection ink mixture containing a plurality of reflection particles. ***The inventive process of printing the transfer adhesive/reflection ink mixture, followed by a drying of the transfer, leads to a "sagging" or "sinking" of the remaining ink with respect to the reflective particles and results in a structure wherein the reflective particles are raised above the remaining ink by means of a simple screen print process, which clearly differs form the prior art as discussed above.***

It is respectfully pointed out that neither LaPerre nor Ueda give any teaching to the subject-matter of new dependent claim 2, specifying that "the transfer adhesive (2) is dried after applying it on the base medium (1) and before applying at least one of the reflection ink (3) and an intermediate ink layer (8)".

As can be gathered in this context from Ueda (see Fig. 5 and col. 5, line 58 to col. 6, line 40 of Ueda), the bead layer 34 is applied (more specifically: sprayed) on the molten adhesive layer 29 before solidifying (col. 6, lines 5-8 of Ueda) in order to bond it to the adhesive layer 29 with the beads partially sunken in the bead layer 29 (col. 6, lines 12-13 of Ueda). In particular, the bead layer 29 is sprayed before the structure reaches the drying unit 37 (see Fig. 5 and col. 6, lines 19-22 of Ueda). In other words, no reflective particles or ink are applied after drying the adhesive layer. Clearly, ***Ueda's adhesive layer must not (i.e. is not allowed to) be dried, but has to be present in the molten state***, since otherwise the desired sinking of the beads would be prevented.

Similarly, LaPerre expressly points out that the layer of glass beads 31 "is provided by spraying it on an adhesive layer 32 while in a tacky state" (see col. 16, lines 29-33 of LaPerre), i.e. not on a dried adhesive layer. These elements clearly teach against the claimed subject matter.

This difference also underlines the inventive concept of making use of the adhesive layer only for the sake of the later application of the transfer to a substrate, and not to actively bond the reflective particles, wherein said reflective particles are left free in order to sink or saggle down on the (preferably dried) transfer, in order to achieve at a structure showing the reflective particles being raised above the remaining structure and having improved reflection properties.

REQUEST FOR ALLOWANCE

Claims 10-18 are pending in this application. The applicant requests allowance of all pending claims.

Respectfully submitted,

RUTAN & TUCKER

Date: 1/20/2004

By _____
Martin Fessenmaier, Ph.D.
Reg. No. 46,697
Tel.: (714) 641-5100
Customer No. 34284

Attorneys for Applicant
P.O. Box 1950
Costa Mesa, CA 92628-1950